

## PARTICULATE FILTER

- Large selection of filtering capacities to remove particulate and water droplets from compressed air or inert gas
- Sintered polyethylene elements, with centrifugal separator, include 5, 25 and 40 Microns
- Optional extended temperature range of -40 °F to 176 °F (-40 °C to 80 °C)
- Innovative two position plastic drain with manual and semi-automatic functions. Additional drains include an automatic style (brass) and manual (stainless steel)
- Polycarbonate and Aluminum bowls with a selection of sight gauge materials that meet industry and application requirements
- Threaded ports allow for individual or modular mounting
- Air purity class according to ISO 8573-1: 2010



| Performance Data                                                                    |  |                                   |                       |                    |              |              |
|-------------------------------------------------------------------------------------|--|-----------------------------------|-----------------------|--------------------|--------------|--------------|
| Series                                                                              |  |                                   | 651                   | 652                | 653          |              |
| Port Sizes                                                                          |  |                                   | 1/8, 1/4              | 1/4, 3/8, 1/2      | 1/2, 3/4, 1  |              |
| Thread Type                                                                         |  |                                   | NPTF, G & Rc          |                    |              |              |
| Nominal Flow - Per ISO 6358<br><br>P1 = 91.4 PSI (6.3 bar)<br>ΔP = 14.5 PSI (1 bar) |  | Micron Rating                     |                       | SCFM (L/min ANR)   |              |              |
|                                                                                     |  | 1/8                               | 5μ                    | 31.2 (885)         | -            | -            |
|                                                                                     |  |                                   | 25μ                   | 32.5 (920)         | -            | -            |
|                                                                                     |  |                                   | 40μ                   | 34.6 (980)         | -            | -            |
|                                                                                     |  | 1/4                               | 5μ                    | 44.1 (1250)        | 70.8 (2020)  | -            |
|                                                                                     |  |                                   | 25μ                   | 49.6 (1410)        | 89.3 (2250)  | -            |
|                                                                                     |  |                                   | 40μ                   | 54.7 (1550)        | 92.4 (2640)  | -            |
|                                                                                     |  | 3/8                               | 5μ                    | -                  | 76.5 (2190)  | -            |
|                                                                                     |  |                                   | 25μ                   | -                  | 118.7 (3390) | -            |
|                                                                                     |  |                                   | 40μ                   | -                  | 135.5 (3870) | -            |
|                                                                                     |  | 1/2                               | 5μ                    | -                  | 80.2 (2290)  | 136.0 (3850) |
|                                                                                     |  |                                   | 25μ                   | -                  | 129.5 (3700) | 162.4 (4600) |
|                                                                                     |  |                                   | 40μ                   | -                  | 153.0 (4370) | 196.0 (5550) |
|                                                                                     |  | 3/4                               | 5μ                    | -                  | -            | 141.3 (4000) |
|                                                                                     |  |                                   | 25μ                   | -                  | -            | 166.0 (4700) |
|                                                                                     |  |                                   | 40μ                   | -                  | -            | 229.5 (6500) |
|                                                                                     |  | 1                                 | 5μ                    | -                  | -            | 150.1 (4250) |
|                                                                                     |  |                                   | 25μ                   | -                  | -            | 176.6 (5000) |
|                                                                                     |  |                                   | 40μ                   | -                  | -            | 245.4 (6950) |
|                                                                                     |  | Maximum Inlet Pressure PSIG (bar) |                       | Polycarbonate Bowl |              | 232 (16)     |
| Aluminum Bowl                                                                       |  |                                   |                       | 232 (16)           | 290 (20)     |              |
| Ambient Temperature Range °F (°C)                                                   |  |                                   | -4 to 122 (-20 to 50) |                    |              |              |
| Fluid Temperature Range °F (°C)                                                     |  |                                   | -4 to 122 (-20 to 50) |                    |              |              |
| Fluid                                                                               |  |                                   | Air or Inert Gas      |                    |              |              |
| Weight lbs. (kg)                                                                    |  | w/Polycarbonate Bowl              | 0.52 (0.238)          | 0.94 (0.426)       | 2.06 (0.934) |              |
|                                                                                     |  | w/Aluminum Bowl                   | 0.84 (0.382)          | 1.22 (0.553)       | 2.51 (1.140) |              |

| Materials in Contact with Fluid |                           |
|---------------------------------|---------------------------|
| Body                            | Aluminum                  |
| Seals                           | NBR/FKM                   |
| Filter Element                  | Sintered Polyethylene     |
| Bowl                            | Polycarbonate or Aluminum |

| Air Purity Class - ISO 8573-1:2010 |         |
|------------------------------------|---------|
| 5μ                                 | (5:8:4) |
| 25μ                                | (6:8:4) |
| 40μ                                | (7:8:4) |

## How to Order - Particulate Filter

**8 651 A B B P 2 J A00 0 N**

### Port Type

- 8 = NPTF
- G = ISO 228/1-G
- J = ISO 7/1 Rc

### <sup>1</sup> Product Series

- 651
- 652
- 653

### Revision

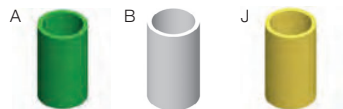
A

### Product Type

- B = Filter - Particulate

### Elements

- A = 40 Micron (Green)
- B = 5 Micron (White)
- J = 25 Micron (Yellow)



### Bowl Type

- K = Metal Bowl without Sight Gauge
- L = Metal Bowl with Sight Gauge (Glass)
- M = Metal Bowl with Sight Gauge (Polyamide)
- N = Polycarbonate Bowl without Bowl Guard (651 only)
- P = Polycarbonate Bowl with Bowl Guard



### Drain Type

- 0 = No Drain
- A = Auto Drain Normally Open
- N = Manual - Semi-automatic Drain
- Q = Manual Drain - Stainless Steel
- C = Auto Drain Normally Closed
- J = External Pulse Drain



### <sup>2</sup> Options

- A00 = No Options
- 101 = Side Mounting Brackets
- 105 = High Temperature (80 °C/176 °F)
- <sup>3</sup> 106 = Low Temperature (-40 °C/-40 °F)
- 109 = FKM Seals
- 117 = ATEX Zones 1-21
- 202 = 105 + 109
- 2A9 = 105 + 106



### Port Size

- 1 = 1/8 (Series 651)
- 2 = 1/4 (Series 651 or 652)
- 3 = 3/8 (Series 652)
- 4 = 1/2 (Series 652 or 653)
- 5 = 3/4 (Series 653)
- 6 = 1 (Series 653)

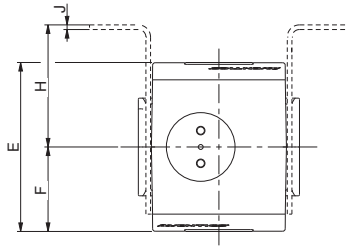
<sup>1</sup> Conforms to ISO standards 1179-1

<sup>2</sup> If multiple options are required, please use the online CAD configurator on the website to generate the part number ([www.emerson.com](http://www.emerson.com)), or consult factory

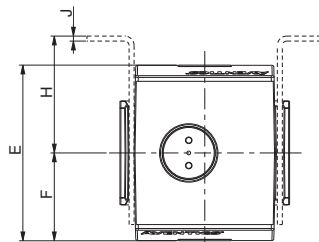
<sup>3</sup> Compressed air must be dry enough so no ice formation is present on the product. All bowls should be emptied prior to ambient temperatures dropping below 32 °F (0 °C)

SERIES  
**651/652/653**

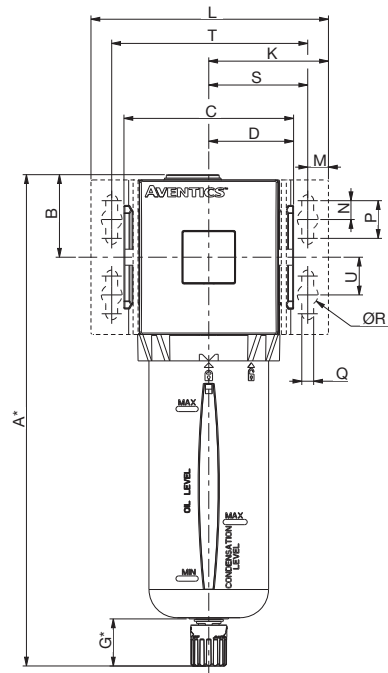
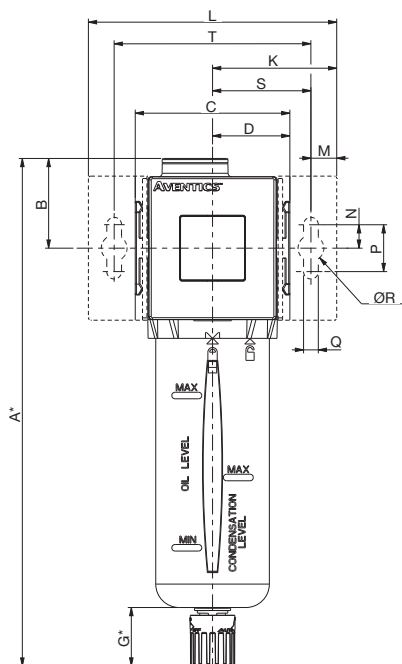
Dimensions: mm (inches) Series 651/652/653 Particulate Filter



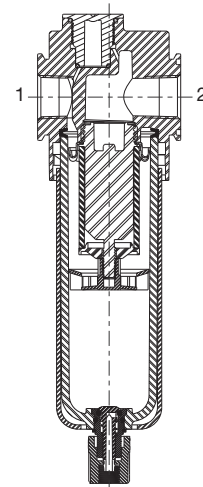
Series 651/652



Series 653



Cross Section -  
Series 651/652/653  
Particulate Filter



To remove bowl allow:  
651 - 44mm (1.8in)  
652 - 75mm (3.0in)  
653 - 100mm (4.0in)  
from the bottom of  
the bowl drain

|     | A*      | B      | C      | D      | E      | F      | G*     | H      | J      |
|-----|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 651 | 197     | 33.8   | 50     | 25     | 58     | 29     | 25     | 44.5   | 1.27   |
|     | (7.76)  | (1.33) | (1.97) | (0.98) | (2.28) | (1.14) | (0.98) | (1.75) | (0.05) |
| 652 | 217     | 38.3   | 66     | 33     | 69     | 34.5   | 25     | 50     | 1.9    |
|     | (8.54)  | (1.51) | (2.60) | (1.30) | (2.72) | (1.36) | (0.98) | (1.97) | (0.07) |
| 653 | 260.7   | 43.8   | 90     | 45     | 93.2   | 46.6   | 25     | 62     | 3      |
|     | (10.26) | (1.72) | (3.54) | (1.77) | (3.67) | (1.83) | (0.98) | (2.44) | (0.11) |

|     | K      | L      | M      | N      | P      | Q      | ØR     | S      | T      | U      |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 651 | 46     | 92     | 11     | 10     | 20     | 6.3    | 11     | 35     | 70     | -      |
|     | (1.81) | (3.62) | (0.43) | (0.39) | (0.79) | (0.25) | (0.43) | (1.38) | (2.76) | -      |
| 652 | 53     | 106    | 11     | 10     | 20     | 6.3    | 11     | 42     | 84     | -      |
|     | (2.09) | (4.17) | (0.43) | (0.39) | (0.79) | (0.25) | (0.43) | (1.65) | (3.31) | -      |
| 653 | 62.5   | 125    | 11     | 10     | 20     | 6.3    | 11     | 51.5   | 103    | 20     |
|     | (2.46) | (4.92) | (0.43) | (0.39) | (0.79) | (0.25) | (0.43) | (2.03) | (4.06) | (0.79) |

\* Variable dimension based on type of drain that is specified; if an Automatic Drain is specified, add another 5mm to G dimension, which also adds 5mm to the A dimension.

## Particulate Filter Flow Charts

